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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,646	12/13/2000	Wolfgang Beilfuss	S 5225 - OP/MM	4803

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EXAMINER

CHOI, FRANK I

ART UNIT	PAPER NUMBER
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1616

DATE MAILED: 06/18/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/734,646

Applicant(s)

BEILFUSS ET AL.

Examiner

Frank I Choi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 29 is objected to because of the following informalities: It appears that there should be a comma mark between “phenoxy ethanol” and “phenoxy propanol”. Appropriate correction is required.

Claims 33, 34 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim in that claim 29 already recites the solvents listed in claim 33 and the amount recited in claim 34. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 29, 31-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 29 recites the limitation “in an amount less than 25% by weight of solvent” which renders the claim indefinite as it is uncertain as to whether Applicant means that the members in the Markush group are present in the solvent in an amount less than 25% by weight of the solvent or the solvent is present in the composition in an amount less than 25% by weight.

Claims 31-34 recite the addition of solvents, however, claim 29 on which they are dependent contains solvents. With respect to claim 31 it is uncertain whether Applicant means

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different solvents. With respect to claim 32, there appears to be a lack of antecedent basis as the solvents listed in claim 32 are not listed in claim 29.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Examiner has duly considered Applicant's arguments but deems them moot in light of the new grounds of rejection herein.

Claims 29-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-121109 in view of Reeve (U.S. Pat. 5,210,094), DE 2337755 (Abstract), DE 19534532 (Abstract), Paulus et al. (US Pat. 4,166,122), Raad et al. (U.S. Pat. 6,267,979) and Grier et al. (US Pat. 4,119,779).

JP 11-012109 teaches the combination of benzisothiazolone, mercaptopyridine N-oxide and hexahydro-1,3,5-tris (2-hydroxyethyl)-s-triazine (paragraphs 0010-0020, 0041). It is taught that hydrophilic organic solvents, such as ethylene glycol, propylene glycol, dipropylene glycol, and glycol ethers can be added to dissolve the active principle (paragraphs 0022-0023).

Reeve teaches that isothiazolones are highly effective microbiocides but that they can be inactivated by components of industrial products as well as over long term storage, as such, isothiazolones are combined with stabilizers, including formaldehyde donors, orthoesters, epoxides and carbonyl compounds (Column 1, Column 2, lines 1-15). It is taught that sulphur containing stabilizers such as mercaptopyridine-N-oxides protect isothiazolones against chemical

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degradation and also act as microbiocides and that the composition can additionally contain solvents such as glycols alcohols and the like (Column 3, Column 4, lines 1-30).

DE 2337755 teach that N-formals or O-formals act synergistically with mercapto pyridine as germicides (Abstract).

DE 19534532 teach that solubilizers such as phenoxyethanol, phenoxypropanols, phenoxybutanols, dipropylene glycol, etc. improve the stabilizing effect of stabilizers on isothiazolones (Abstract).

Paulus et al. teach that 5,5'-dimethyl-di-(1,3-oxazolidin 3-yl) methane which is prepared by the reaction of formaldehyde and isopropanolamine is effective as an industrial microbial agent and which can be combined with other active compounds such as, reaction products of alcohol or amines with formaldehyde, pyridine thiol-1-oxide, 1,2-benzisothiazlone and 2-mercapto-benzthiazole (Columns 1,2).

Raad et al. teach that biofouling causes problems in circulating liquid systems, including increase in corrosion (Column 1). It is taught that chelators, including EDTA and the like, assist in disrupting and/or dissolving glycocalyx, thereby improving that activity of antimicrobial compounds such as formaldehyde and isothiazolones, bind metal ions used by bacteria and are growth inhibitory against species of air and water born microorganisms (Columns 9-13).

Grier et al. teaches that corrosion inhibitors such as inorganic salts of 2-mercaptobenzothiazole, alkenylsuccinic acids and of stearic acid, butyl esters of lipid-soluble carboxylic acids are preferably added in combination with formaldehyde condensation products and that methyl alcohol and glycols act as freezing point depressants (Column 5, Column 6, lines 8-17).

The difference between the prior art and the claimed invention is that the prior art does not expressly disclose the combination of a bactericidal N-formal, fungicide and stabilizer in the claimed amounts. However, the prior art amply suggests the same as the combination of N-formals, isothiazolinones and stabilizers, such as mercaptopyridine N-oxides, and other disinfectants, chelates and corrosion inhibitors are known in the art. As such, it would have been well within the skill of and one of ordinary skill in the art would have been motivated to combine the claimed N-formals with other biocides, such as isothiazolones and O-formals, stabilizers, such mercaptopyridine N-oxides, solvents, such as glycols and alcohols, complexing agents, such as EDTA and the like, with the expectation that the composition would exhibit increased microbiocidal efficacy and be suitable for use on industrial substrates containing metals.

With respect to Applicant's arguments, in so far as they to apply to the prior cited herein, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Further, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In response to applicant's argument relative to the disparate fields of endeavor of each publication, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the

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applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, stabilization of isothiazolone compounds, effective combinations of different disinfectants, use of chelators and corrosion inhibitors, are all reasonable pertinent to the particular problem with Applicant is concerned, i.e. stable disinfectant preparations for industrial products. In response to Applicant's arguments that Reeve teaches away from the claimed invention because it discloses the use of water. However, Reeve does not require the use of water as a solvent and in fact discloses the use of organic and polyol solvents (Column 4, lines 3-13).

Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention has been collectively taught by the combined teachings of the references.

Claims 29-48,50 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/52416 in view of Reeve (U.S. Pat. 5,210,094), DE 2337755 (Abstract), DE 19534532 (Abstract), Paulus et al. (US Pat. 4,166,122), Raad et al. (U.S. Pat. 6,267,979) and Grier et al. (US Pat. 4,119,779).

WO 98/524416 teaches a composition comprising a biocidal N-formal, 3,3'-methylenebis(5-methyloxazolidine), which may be combined with biocidal O-formals (Pg. 3, lines 17-35). It is taught that the composition can contain further additives which have a favourable effect on the technical properties of the composition, such a solvents, such as propylene glycol, phenoxypropanol and phenoxyethanol and that certain glycol have a positive influence on the odor of the composition by reducing the emission of volatile substances (Pg. 4, lines 25-33). It is taught that the composition can further include other biocidal active

ingredients, such as isothiazolone and mercaptopyridines, and additives which improve stability (Pg. 5, lines 7-20).

Reeve (U.S. Pat. 5,210,094), DE 2337755 (Abstract), DE 19534532 (Abstract), Paulus et al. (US Pat. 4,166,122), Raad et al. (U.S. Pat. 6,267,979) and Grier et al. (US Pat. 4,119,779) are cited for the same reasons as above and are incorporated herein to avoid repetition.

The difference between the prior art and the claimed invention is that the prior art does not expressly disclose the combination of a bactericidal N-formal, fungicide and stabilizer in the claimed amounts. However, the prior art amply suggests the same as the combination of N-formals, isothiazolinones and stabilizers, such as mercaptopyridine N-oxides, and other disinfectants, chelates and corrosion inhibitors are known in the art. As such, it would have been well within the skill of and one of ordinary skill in the art would have been motivated to combine the claimed N-formals with other biocides, such as isothiazolones and O-formals, stabilizers, such mercaptopyridine N-oxides, solvents, such as glycols and alcohols, complexing agents, such as EDTA and the like, with the expectation that the composition would exhibit increased microbiocidal efficacy and be suitable for use on industrial substrates containing metals.

With respect to Applicant's arguments, in so far as they to apply to the prior cited herein, Examiner incorporates the discussion in the first 35 USC 103 rejection above to avoid repetition.

Therefore, the claimed invention, as a whole, would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention has been collectively taught by the combined teachings of the references.

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Conclusion

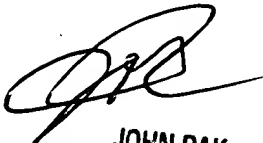
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Choi whose telephone number is (703) 308-0067. Examiner maintains a flexible schedule. However, Examiner may generally be reached Monday-Friday, 8:00 am – 5:30 pm (EST), except the first Friday of the each biweek which is Examiner's normally scheduled day off.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. José Dees, can be reached on (703) 308-4628. Additionally, Technology Center 1600's Receptionist and Customer Service can be reached at (703) 308-1235 and (703) 308-0198, respectively.

FIC

June 14, 2003


JOHN PAK
PRIMARY EXAMINER
GROUP 1600

